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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/877,581	06/07/2001	Jonathan Yen	10015191-1	1662

7590 12/12/2003

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EXAMINER	
CHAWAN, SHEELA C	
ART UNIT	**PAPER NUMBER**
2625	4

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/877,581	YEN ET AL.	
	Examiner	Art Unit	
	Sheela C Chawan	2526	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11-17,19 and 20* is/are rejected.

7)☒ Claim(s) *9,10 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

1. Drawings filed on 6/7/01 have been approved.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 11-14 and 19-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Willsie (US 5,120,940).

For claims 1, 13 and 20, Willsie discloses a method of extracting from an input image (10 in figure 1 is an input image, also 22 in figure 2 is an input image) a graphical bar code (12 in figure 1 is a bar code) containing graphically encoded information, comprising:

trimming non-graphical bar code regions from the input image based upon estimated position coordinates for a detected graphical bar code candidate to produce

a trimmed graphical bar code candidate for decoding (in figure 1, a bar code is represented by 12; it may have any location or orientation; the background content for example large clutter, small clutter, signature etc. in figure 1 correspond to a non-graphical bar code regions; the detection and positional orientation of bar code are explained by at least figures 1-2 ; trimming of the non graphical bar code regions is provided by morphological operations as shown in figures 3-8).

Regarding claim 1, 13 and 20, although Willsie does not specifically disclose the operation of trimming the non graphical bar code regions, such limitations are merely a matter of design choice and would have been obvious in the system of Willsie. Willsie teaches that the morphological operations including erosion and dilation can be used on non graphical objects such as large and small clutters, signature etc. in order to reduce the false readings from the barcode reader. The limitations in claims 1, 13 and 20 do not define a patentably distinct invention over that in Willsie since both the invention as a whole and Willsie are directed to accurately extract or detect the bar code symbols. The use of trimming or cropping for non graphical bar code regions before extracting or detecting bar code is in consequential for the invention as a whole and presents no new or unexpected results, so long as the non graphical bar code regions have been successfully reduced or eliminated. Therefore, to have morphological operations to remove the background content in Willsie would have been a matter of obvious design choice to one of ordinary skill in the art.

For claims 2 and 14, Willsie discloses the method, further comprising cropping (morphological operations provided by figures 2-8 also provides cropping of the input

image 10) the input image before trimming based upon estimated position coordinates for a detected graphical bar code candidate to produce an inclusive image region encompassing the detected graphical bar code.

For claim 3, Willsie disclose the method, further comprising computing the angular orientation of the detected graphical bar code candidate (column 4, lines 32-40).

For claims 11 and 19, Willsie disclose the method further comprising extracting a second graphical bar code candidate detected in the input image in response to a determination that a first extracted graphical bar code candidate does not correspond to the graphical bar code (columnn2, lines 24-31).

For claim 12, Willsie discloses the method further comprising resolution scaling the trimmed graphical bar code candidate (image enlargement 50 in figure 2 provides scaling).

3. Claims 4-6 and 15 are rejected under 35 U>S.C. 103 (a) as being unpatentable over Willsie (US 5,120,940) as applied to claims 1-3, 13-14 and 20 above and further in view of Klancnik et al. (US 5,550,365).

For claims 4-6 and 15, Willsie discloses the claimed invention except for the application of intensity histogram profiles. However, in the same field of endeavor, Klancnik et al. disclose a system for decoding bar code symbols generating a histogram of the pixel image (column 3, lines 31-33). He further teaches the histogram indicating the minimum and maximum intensity levels for the pixels in the image, which are used to determine the widths of the bars and spaces of bar code symbols (column 3, lines 33-

39). It would have been obvious to one having ordinary skill in the art to include the use of intensity histogram profiles as taught by Klancnik et al. in the method of Willsie because the detecting and decoding system does not require a priori knowledge of the orientations and positions of bar code symbols in the pixel images as shown by Klancnik et al. in column 2, lines 57-59.

4. Claims 7-8 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willsie (US 5,120,940) in view of Shellhammer et al. (US 5,523,552).

For claims 7-8 and 16-17, Willsie differs in that he does not clearly disclose de-skewing of the bar code and the rotation of input image for processing the rotated input image to detect a bar code. However, in the same field of endeavor, Shellhammer et al.disclose a method to scan randomly oriented two-dimensional bar code symbols including de-skewing of the bar code and the rotation of input image for processing the rotated input image to detect a bar code (see column 3, lines 1-15). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Willsie by including de-skewing of the bar code and the rotation of input image for processing the rotated input image to detect a bar code, as taught by Shellhammer et al. in order to calculate the angle of skew of the miss oriented bar code symbol with respect to the field of view of the reading device in order to correct for the miss orientation by rotating the field of view to the calculated angle as set forth by Shellhammer et al. at column 2, lines 57-61.

Allowable Subject Matter

5. Claims 9-10 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other prior art cited

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kibrick (US 4,901,073) discloses an encoder for measuring the absolute position of moving elements.

Smith et al. (US 5,880,451) discloses a system and method for OCR assisted bar code decoding.

Hecht et al. (US 6,193,158 B1) discloses a high speed image acquisition system and method.

Davies et al. (US 6,470,096 B2) discloses a method for locating user interface tags in a document processing system.

Guthmueller et al. (US 4,822,986) discloses a method of detecting and reading postal bar codes.

Lubow et al. (US 5,835,615) discloses a bar code printability gauge.

Kubon (US 5,682,030) discloses a method and apparatus for decoding bar code data from a video signal and application thereof.

Hayodh (US 6,212,504 B1) discloses a self-authentication of value documents using encoded indices.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 703-305- 4876. The examiner can normally be reached on Monday through Thursday 7.30 a.m. to 6.00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308 - 5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

Sheela Chawan
Patent Examiner
Group Art Unit 2625
Dec 10, 2003

BHAVESH M. MEHTA
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